

Claims

1. A semiconductor device comprising a semiconductor film, a gate insulating film formed on at least part of the semiconductor film, and a gate electrode formed on the gate insulating film,

wherein the gate electrode does not cover any end of the semiconductor film.

2. A semiconductor device comprising a semiconductor film having a source region and a drain region, a gate insulating film formed on at least part of the semiconductor film, and a gate electrode formed on the gate insulating film,

wherein the width of the gate electrode is smaller than that of the semiconductor film.

3. A semiconductor device according to Claim 1 or 2, further comprising a sub gate electrode connected to the gate electrode.

4. A semiconductor device according to Claim 3, wherein the sub gate electrode is disposed on the gate electrode.

5. A semiconductor device according to Claim 3 or 4, wherein the sub gate electrode is disposed so as to cover ends of the semiconductor film.

6. A semiconductor device comprising a semiconductor film, a gate insulating film formed on at least part of the semiconductor film, and a gate electrode formed on the gate insulating film,

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wherein ends of the semiconductor film comprise regions formed of an intrinsic semiconductor which is not doped with dopant.

7. A semiconductor device comprising a semiconductor film, a gate insulating film formed on at least part of the semiconductor film, and a gate electrode formed on the gate insulating film,

wherein the semiconductor film comprises a region formed of an intrinsic semiconductor which is not doped with dopant, the region extending past the gate electrode.

8. A semiconductor device comprising a semiconductor film having a source region and a drain region, a gate insulating film formed on at least part of the semiconductor film, and a gate electrode formed on the gate insulating film,

wherein the semiconductor film comprises a region formed of an intrinsic semiconductor which is not doped with dopant, the region extending toward the source region or the drain region from the gate electrode.

9. A semiconductor device comprising a semiconductor film having a source region and a drain region, a gate insulating film formed on at least part of the semiconductor film, and a gate electrode formed on the gate insulating film,

wherein the semiconductor film comprises a plurality of regions formed of an intrinsic semiconductor which is not doped with dopant, the regions extending toward the source region or the drain region.

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10. A semiconductor device according to any one of Claims 1 to 9, wherein the semiconductor film is formed on an insulating layer.

11. A circuit board comprising a semiconductor device according to any one of Claims 1 to 10 and wires for supplying signals or electric power to the semiconductor device.

12. An electro-optical device comprising a circuit board according to Claim 11, a first electrode formed above the circuit board, and an electro-optical element formed above the first electrode.

13. An electro-optical device comprising an electro-optical element and a semiconductor device according to any one of Claims 7 to 9, the electro-optical element and the semiconductor device being used as at least one electronic circuit selected from the group consisting of shift registers, level shifters, buffer circuits, and analog switches.

14. An electro-optical device according to Claim 12 or 13, wherein the electro-optical element is an organic electroluminescence element.

15. An electronic apparatus comprising an electro-optical device according to any one of Claims 12 to 14, the electro-optical device being used as a display.

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